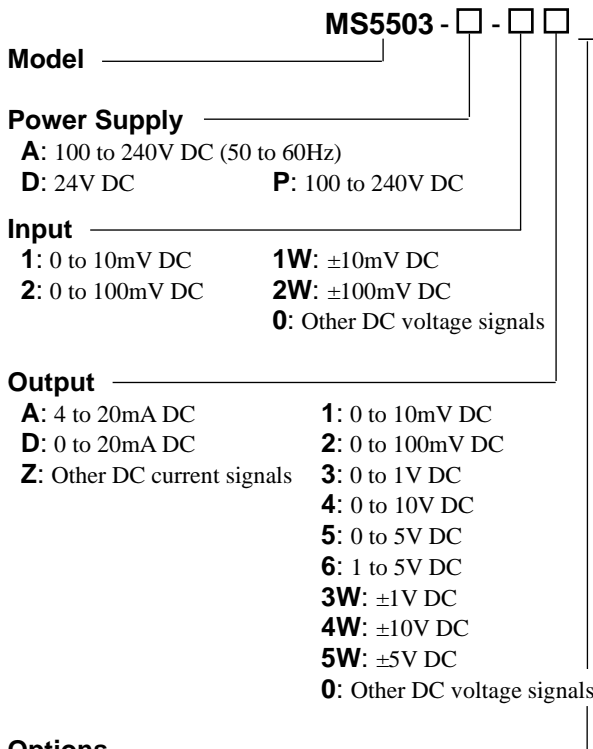


DESCRIPTION

The MS5503 is a plug-in millivolt (mV) isolator that converts mV input signals from sensors or other devices into commonly used DC signals and provides an isolated single output.

ORDERING CODE



- A:** 100 to 240V DC (50 to 60Hz)
D: 24V DC **P:** 100 to 240V DC
- 1:** 0 to 10mV DC **1W:** ±10mV DC
2: 0 to 100mV DC **2W:** ±100mV DC
0: Other DC voltage signals

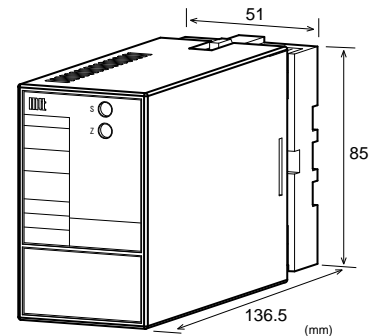
- A:** 4 to 20mA DC **1:** 0 to 10mV DC
D: 0 to 20mA DC **2:** 0 to 100mV DC
Z: Other DC current signals **3:** 0 to 1V DC
4: 0 to 10V DC
5: 0 to 5V DC
6: 1 to 5V DC
3W: ±1V DC
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signals

- No code:** None
/K: Fast response (0 to 90% response time: 10ms max.)
/X: Others (Special order)
 * For non-standard options, ask MTT for availability.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
 (e.g.) MS5503-A-2W4W/K

Other Ordering Examples:
 For an input code of "0": MS5503-A-06 (Input: 0 to 75mV)
 For an output code of "Z": MS5503-A-2Z (Output: 8 to 20mA)
 For an option code of "X": MS5503-A-26/X (Response frequency 50Hz)
 Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /KX).



SPECIFICATIONS

POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10% 100 to 240V DC: 85 to 264V DC			
Power Sensitivity	Better than ±0.1% of span for each power supply range.			
Power Line Fuse	160mA fuse			
Maximum Power Consumption	Power	100-240V AC	24V DC	100-240V DC
		Approx. 4.0VA	Approx. 1.2W	Approx. 4.8W

INPUT SECTION

Input Resistance	1MΩ min. with or without power.	
Allowable Input Voltage	30V DC max., continuous.	
Range Available	Input Range (DC) -200mV to 200mV	
	Input Span (DC) 5mV* to 400mV	
	Input Bias -100 to 100%	
Note: For any input range including negative input signals, the input span ranges from *10mV to 400mV.		
Input Spec Ex. 1: For 50 to 150mV input, the input span is 100mV and the bias +50%.		
Input Spec Ex. 2: For -10 to 30mV input, the input span is 40mV and the bias -25%.		

OUTPUT SECTION

Allowable Output Load	Voltage Output (DC)	
	1V span and up	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
	Current Output (DC)	4 to 20mA 750Ω max.
Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)	
Span Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)	

Ranges Available

	Current Signal	Voltage Signal
Output Range (DC)	0 to 20mA	-10 to 10V
Output Span (DC)	4 to 20mA	10mV to 20V
Output Bias	0 to 100%	-100 to 100%

* For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.
 Output Spec Ex. 1: For 4 to 20mA output, the output span is 16mA and the bias +25%.
 Output Spec Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

PERFORMANCE

Accuracy Rating	Better than $\pm 0.1\%$ of span (at $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$).
Temperature Effect	Better than $\pm 0.2\%$ of span per 10°C change in ambient.
Response Time	160ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	3-way isolation between input, output, and power.
Insulation Resistance	100M Ω min. (@ 500V DC) between input, output, and power.
Dielectric Strength	Input / Output / Power: 2000V AC for 1 minute (Cutoff current: 0.5mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989.
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

PHYSICAL

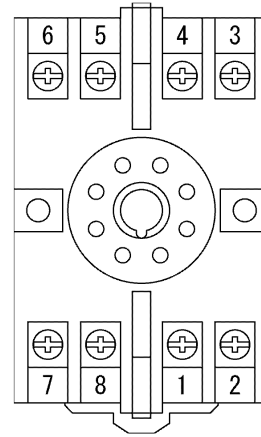
Installation	Wall/DIN rail mounting
Mounting Direction	Vertical
Screwing Torque	0.78 to 1.18 [Nm] * Recommended
Wiring	M3.5 screw terminal connection
External Dimensions	W51 x H85 x D136.5 mm (including the socket)
Weight	Main unit: 200g max. Socket: 60g max.

MATERIAL

Housing	ABS resin (UL 94V-0)
Socket	ABS resin (UL 94V-0)
Screw Terminal	Galvanized steel with trivalent chromate finish
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)
Conformal Coating	HumiSeal [®] 1A27NSLU (Polyurethane)

* HumiSeal[®] is a registered trademark of Chase Corporation.

TERMINAL ASSIGNMENTS



①	+ OUTPUT	
②	- OUTPUT	
③	+ INPUT	
④	- INPUT	
⑤	N.C.	
⑥	N.C.	
⑦	P (+)	POWER
⑧	N (-)	

BLOCK DIAGRAM

